

Turfgrass Pests Remain a Constant Challenge

By R. L. Brandenburg, Turfgrass Entomologist, N. C. State University

Each year seems to offer its own set of challenges for turfgrass managers. Unusual weather patterns, pest outbreaks, and product performance can create their own concerns each year. Most of these situations are difficult to predict, so it generally leaves the turfgrass manager with little advance notice about pest problems. The most appropriate remedy often changes with each situation. The past two years have presented significant challenges from both a pest and a regulatory perspective.

1998: Fall armyworm year

For example, in 1998, many areas of the Southeast suffered through a record year for fall armyworms. Fortunately, these severe outbreaks only occur on an infrequent basis, but when they happen, it is a major concern. Unfortunately, such outbreaks

could occur again any year, so being prepared is the best defense.

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One obvious challenge is that of early detection. Small worms are hard to see, and by the time the worms are large, they are harder to control and have already caused a lot of damage. Early detection is possible by using a soapy water fluid (2 tbs. liquid dishwashing detergent in 2 gallons of water).

While small armyworms feed day and night, larger ones hide during the day. Even so, both sizes are hard to see without the help of a soapy flush. The presence of birds searching for food in the turf is often the first indication that an insect problem is developing.

Control is most effective if applied against smaller worms. Treating late in the day also helps. If one can avoid irrigation as well as mowing the turf for at least 24 hours following treatment, better control will be obtained. In some years, multiple applications of treatments are necessary.

Another mild winter

Much of the South has experienced three consecutive mild winters. This winter was perhaps the mildest of all in many areas, particularly in the Southeast. The only really cold weather experienced was from around Christmas to New Year's Day. Other than that brief period, many areas experienced temperatures 4 to 6 degrees above normal, which is a rather significant shift over a several month period.

Whenever we have unusual winters, either warmer or colder than normal, individuals in the insect pest control business get inundated with calls concerning what impact the unusual weather will have on the summer's insect problems.

While warm weather can favor the survival and development of some insect pests, it might also favor natural enemies of these insects. The ecology of most insects is fairly complex and affected by a number of factors.

Hot Spots

During 1999, we have seen plenty of fire ants in the northern extremes of their range, probably due to the mild winters.

Most turfgrass managers saw fewer Japanese beetles this year due to extreme drought and heat of the summer.

Problems associated with southern chinch bugs on St. Augustinegrass were

greatly enhanced due to these same weather patterns.

We experienced an abundance of two-lined spittlebugs in many areas, possibly due to the increasing use of centipedegrass in home lawns, which the nymphs prefer and hollies in the landscape, which the adults like. This has been an increasing problem in many high growth areas of the Southeast.

Mole cricket egg hatch occurred early in the Carolinas this year despite the dry weather, and we are starting to see them spread more into bahiagrass similar to the situation observed in Florida for many years.

Growing Concerns

As the population growth in the Sun Belt continues, we see increasing problems with pests in turfgrass. It only makes sense that, as the number of lawns, commercial properties, athletic fields, park, golf courses, and other turf areas increase, the pests will take advantage of what we offer them.

In recent years, we have observed increases in the incidence of green June beetles, two-lined spittlebugs, fire ants and short-tailed crickets. In addition, we are seeing more of the Oriental beetle white grub in the South. Historically, this has been a pest in the northeastern United States.

Is it simply a result of increasing populations and urban sprawl in the southeastern United States and other areas? Is it the result of higher expectations and simply noticing more problems in turf? Or is it the result of the loss of the old broad-spectrum, long-residual-activity compounds that killed every bug and lasted forever?

As mentioned earlier, certain weather conditions do encourage specific pest problems on a short-term basis (e.g. chinch bugs), but the debate over global warming makes one wonder if those who predict the doom of warmer temperatures are seeing the initial phases of their predictions come true.

During 1999, and any other year, the key to cost-effective pest management was

timely implementation of management strategies. This is made possible through an efficient program of scouting and monitoring pest populations, including weeds, insects and diseases on a regular basis. Time spent on such monitoring generally pays big dividends.

New Control Options

Research is continually producing new tools to aid in the battle against insect pests in turf. Recently, there has been a bit of emphasis on "natural" or biological controls and new classes of chemistry. In 1998, we saw products such as Mach 2 and Deltagard registered and marketed for a wide range of turfgrass pests.

Mach 2 entered primarily into the white grub market as a "reduced risk" insecticide, similar to the manner Merit was introduced.

Deltagard joined the list of broad spectrum pyrethroid insecticides, characterized by low use rates, such as Talstar, Scimitar, Tempo, Astro and Mavrik.

In recent years, the registration of other products with different chemistries, such as Chipco Choice for mole crickets, ConserveSC, and Merit has broadened the range of materials available for use on turfgrass. New products for 1999 included Distance Fire Ant Bait from Valent, which works as an insect growth regulator and continues this trend of new chemistries against our major pests.

One point that is true for many of the newer products, such as Chipco Choice, Merit, and Mach 2, is that the spectrum of insects they control is narrower than some of the older products we used. It used to be that when we treated for one pest, we gen-

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erally cleaned up most of the other problems we might have had. Now, it is possible that when you treat with one of the newer, more environmentally friendly products, you will not obtain control of other pests present and their populations can increase. Such "secondary pest" problems might explain some of the increases in pests we have seen.

The constant search for new materials is critical to our future. Some of the older compounds, such as chlorpyrifos (eg. Dursban), could have an uncertain future under the Food Quality Protection Act, and new replacement compounds might be necessary. Some of the older compounds used on golf courses for grub control, such as diazinon, have been lost. The label for Oftanol for turf was voluntarily withdrawn by Bayer Corp. Mach 2 and Merit help fill the void left by the loss of these "old standards."

Research on the development of biological materials continues with products such as entomogenous nematodes, fungal and bacterial pathogens and natural compounds. While we have seen increasing success with many of these products, they are yet to provide consistency of control seen with many of the conventional pesticides. However, that gap is narrowing.

The greatest success stories are from turfgrass managers who were persistent and have found a particular technique to get the most out of these products.

FQPA Will Shift Pest Control Approaches

The Environmental Protection Agency continues to move forward in the implementation of the FQPA. This legislation will affect the availability of some pesticides for use on turfgrass.

Generally, the groups of pesticides that are the initial targets are the older chemistries like the organophosphates and carbamates. This means as a general rule, the newer products are not currently affected by this law. The first group of pesticides going through this process are the

organophosphates (such as Dursban and Mocap) and the carbamates (such as Sevin and Turcam). Under this new law, some uses of some products on turf could be lost.

In an effort to help compensate for any pesticide losses from a commodity, the EPA is taking several steps. One of these is to facilitate the registration of "reduced risk" pesticides and biological pesticides. In 1998, almost half of the new pesticides registered by the EPA were biological or natural type products.

The EPA is also funding research to develop new alternatives to many of the older pesticides that may eventually be lost.

This funding will encourage the development of new approaches to pest control, while FQPA itself indirectly encourages companies to pursue new pesticide chemistry. In the long run, this will undoubtedly create a rather significant shift in the types of materials we are using as pest management tools.

Of course, this legislation and its impact on the availability of certain pesticides further adds to the uncertainty of each year. The question of which pests will occur is difficult to answer, and the uncertain future of many of our broad spectrum products that would cure whatever ails us make planning even more difficult. The newer, narrow spectrum pesticides make it difficult to keep a small inventory of one or two products to cover all potential problems. From the pests to the pesticides, it's a continually evolving picture that requires a lot of effort to keep abreast of the latest information. This scenario further emphasizes the need we all have for continued education in the area of pest management.

Rick L. Brandenburg is professor of entomology in the College of Agricultural and Life Sciences at North Carolina State University in Raleigh. He can be reached at (919) 515-2703.